

SEQUENCE LISTING

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<120> RECOMBINANT PLANT EXPRESSING NON-COMPETITIVELY BINDING Bt INSECTICIDAL CRYSTAL PROTEINS

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<140> 09/661,061

<141> September 13, 2000

<150> PCT/EP90/00905
<151> 1990-05-30

<150> GB 89401499.2
<151> 1989-05-31

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<170> PatentIn Ver. 2.0

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995 1000 1005

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Asn Leu Glu Gly Leu Glu Asn Asn Leu Asn Ile Tyr Val Glu Ala Phe		
100	105	110
aaa gaa tgg gaa gaa gat cct aat aat cca gaa acc agg acc aga gta		620
Lys Glu Trp Glu Asp Pro Asn Asn Pro Glu Thr Arg Thr Arg Val		
115	120	125
att gat cgc ttt cgt ata ctt gat ggg cta ctt gaa agg gac att cct		668
Ile Asp Arg Phe Arg Ile Leu Asp Gly Leu Leu Glu Arg Asp Ile Pro		
130	135	140
145		
tcg ttt cga att tct gga ttt gaa gta ccc ctt tta tcc gtt tat gct		716
Ser Phe Arg Ile Ser Gly Phe Glu Val Pro Leu Leu Ser Val Tyr Ala		
150	155	160
caa gcg gcc aat ctg cat cta gct ata tta aga gat tct gta att ttt		764
Gln Ala Ala Asn Leu His Leu Ala Ile Leu Arg Asp Ser Val Ile Phe		
165	170	175
gga gaa aga tgg gga ttg aca acg ata aat gtc aat gaa aac tat aat		812
Gly Glu Arg Trp Gly Leu Thr Thr Ile Asn Val Asn Glu Asn Tyr Asn		
180	185	190
aga cta att agg cat att gat gaa tat gct gat cac tgt gca aat acg		860
Arg Leu Ile Arg His Ile Asp Glu Tyr Ala Asp His Cys Ala Asn Thr		
195	200	205

tat aat cggtt aat aat tta ccg aaa tct acg tat caa gat tgg		908
Tyr Asn Arg Gly Leu Asn Asn Leu Pro Lys Ser Thr Tyr Gln Asp Trp		
210	215	220
		225
ata aca tat aat cga tta cgaga gac tta aca ttg act gta tta gat		956
Ile Thr Tyr Asn Arg Leu Arg Arg Asp Leu Thr Leu Thr Val Leu Asp		
230	235	240
atc gcc gct ttc ttt cca aac tat gac aat agg aga tat cca att cag		1004
Ile Ala Ala Phe Phe Pro Asn Tyr Asp Asn Arg Arg Tyr Pro Ile Gln		
245	250	255
cca gtt ggt caa cta aca agg gaa gtt tat acg gac cca tta att aat		1052
Pro Val Gly Gln Leu Thr Arg Glu Val Tyr Thr Asp Pro Leu Ile Asn		
260	265	270
ttt aat cca cag tta cag tct gta gct caa tta cct act ttt aac gtt		1100
Phe Asn Pro Gln Leu Gln Ser Val Ala Gln Leu Pro Thr Phe Asn Val		
275	280	285
atg gag agc agc gca att aga aat cct cat tta ttt gat ata ttg aat		1148
Met Glu Ser Ser Ala Ile Arg Asn Pro His Leu Phe Asp Ile Leu Asn		
290	295	300
		305
aat ctt aca atc ttt acg gat tgg ttt agt gtt gga cgc aat ttt tat		1196
Asn Leu Thr Ile Phe Thr Asp Trp Phe Ser Val Gly Arg Asn Phe Tyr		
310	315	320
tgg gga gga cat cga gta ata tct agc ctt ata gga ggt ggt aac ata		1244
Trp Gly Gly His Arg Val Ile Ser Ser Leu Ile Gly Gly Asn Ile		
325	330	335
aca tct cct ata tat gga aga gag gcg aac cag gag cct cca aga tcc		1292
Thr Ser Pro Ile Tyr Gly Arg Glu Ala Asn Gln Glu Pro Pro Arg Ser		
340	345	350
ttt act ttt aat gga ccg gta ttt agg act tta tca aat cct act tta		1340
Phe Thr Phe Asn Gly Pro Val Phe Arg Thr Leu Ser Asn Pro Thr Leu		
355	360	365
cga tta tta cag caa cct tgg cca gcg cca cca ttt aat tta cgt ggt		1388
Arg Leu Leu Gln Gln Pro Trp Pro Ala Pro Pro Phe Asn Leu Arg Gly		
370	375	380
		385
gtt gaa gga gta gaa ttt tct acac cct aca aat agc ttt acg tat cga		1436
Val Glu Gly Val Glu Phe Ser Thr Pro Thr Asn Ser Phe Thr Tyr Arg		
390	395	400
gga aga ggt acg gtt gat tct tta act gaa tta ccg cct gag gag aat		1484
Gly Arg Gly Thr Val Asp Ser Leu Thr Glu Leu Pro Pro Glu Asp Asn		
405	410	415

agt gtg cca cct cgc gaa gga tat agt cat cgt tta tgt cat gca act		1532
Ser Val Pro Pro Arg Glu Gly Tyr Ser His Arg Leu Cys His Ala Thr		
420	425	430
ttt gtt caa aga tct gga aca cct ttt tta aca act ggt gta gta ttt		1580
Phe Val Gln Arg Ser Gly Thr Pro Phe Leu Thr Thr Gly Val Val Phe		
435	440	445
tct tgg acg cat cgt agt gca act ctt aca aat aca att gat cca gag		1628
Ser Trp Thr His Arg Ser Ala Thr Leu Thr Asn Thr Ile Asp Pro Glu		
450	455	460
aga att aat caa ata cct tta gtg aaa gga ttt aga gtt tgg ggg ggc		1676
Arg Ile Asn Gln Ile Pro Leu Val Lys Gly Phe Arg Val Trp Gly Gly		
470	475	480
acc tct gtc att aca gga cca gga ttt aca gga ggg gat atc ctt cga		1724
Thr Ser Val Ile Thr Gly Pro Gly Phe Thr Gly Gly Asp Ile Leu Arg		
485	490	495
aga aat acc ttt ggt gat ttt gta tct cta caa gtc aat att aat tca		1772
Arg Asn Thr Phe Gly Asp Phe Val Ser Leu Gln Val Asn Ile Asn Ser		
500	505	510
cca att acc caa aga tac cgt tta aga ttt cgt tac gct tcc agt agg		1820
Pro Ile Thr Gln Arg Tyr Arg Leu Arg Phe Arg Tyr Ala Ser Ser Arg		
515	520	525
gat gca cga gtt ata gta tta aca gga gcg gca tcc aca gga gtg gga		1868
Asp Ala Arg Val Ile Val Leu Thr Gly Ala Ala Ser Thr Gly Val Gly		
530	535	540
545		
ggc caa gtt agt gta aat atg cct ctt cag aaa act atg gaa ata ggg		1916
Gly Gln Val Ser Val Asn Met Pro Leu Gln Lys Thr Met Glu Ile Gly		
550	555	560
gag aac tta aca tct aga aca ttt aga tat acc gat ttt agt aat cct		1964
Glu Asn Leu Thr Ser Arg Thr Phe Arg Tyr Thr Asp Phe Ser Asn Pro		
565	570	575
ttt tca ttt aga gct aat cca gat ata att ggg ata agt gaa caa cct		2012
Phe Ser Phe Arg Ala Asn Pro Asp Ile Ile Gly Ile Ser Glu Gln Pro		
580	585	590
cta ttt ggt gca ggt tct att agt agc ggt gaa ctt tat ata gat aaa		2060
Leu Phe Gly Ala Gly Ser Ile Ser Ser Gly Glu Leu Tyr Ile Asp Lys		
595	600	605
att gaa att att cta gca gat gca aca ttt gaa gca gaa tct gat tta		2108
Ile Glu Ile Ile Leu Ala Asp Ala Thr Phe Glu Ala Glu Ser Asp Leu		
610	615	620
625		

gaa aga gca caa aag gcg gtg aat gcc ctg ttt act tct tcc aat caa Glu Arg Ala Gln Lys Ala Val Asn Ala Leu Phe Thr Ser Ser Asn Gln 630 635 640	2156
atc ggg tta aaa acc gat gtg acg gat tat cat att gat caa gta tcc Ile Gly Leu Lys Thr Asp Val Thr Asp Tyr His Ile Asp Gln Val Ser 645 650 655	2204
aat tta gtg gat tgt tta tca gat gaa ttt tgt ctg gat gaa aag cga Asn Leu Val Asp Cys Leu Ser Asp Glu Phe Cys Leu Asp Glu Lys Arg 660 665 670	2252
gaa ttg tcc gag aaa gtc aaa cat gcg aag cga ctc agt gat gag cgg Glu Leu Ser Glu Lys Val Lys His Ala Lys Arg Leu Ser Asp Glu Arg 675 680 685	2300
aat tta ctt caa gat cca aac ttc aga ggg atc aat aga caa cca gac Asn Leu Leu Gln Asp Pro Asn Phe Arg Gly Ile Asn Arg Gln Pro Asp 690 695 700 705	2348
cgt ggc tgg aga gga agt aca gat att acc atc caa gga gga gat gac Arg Gly Trp Arg Gly Ser Thr Asp Ile Thr Ile Gln Gly Gly Asp Asp 710 715 720	2396
gta ttc aaa gag aat tac gtc aca cta ccg ggt acc gtt gat gag tgc Val Phe Lys Glu Asn Tyr Val Thr Leu Pro Gly Thr Val Asp Glu Cys 725 730 735	2444
tat cca acg tat tta tat cag aaa ata gat gag tcg aaa tta aaa gct Tyr Pro Thr Tyr Leu Tyr Gln Lys Ile Asp Glu Ser Lys Leu Lys Ala 740 745 750	2492
tat acc cgt tat gaa tta aga ggg tat atc gaa gat agt caa gac tta Tyr Thr Arg Tyr Glu Leu Arg Gly Tyr Ile Glu Asp Ser Gln Asp Leu 755 760 765	2540
gaa atc tat ttg atc cgt tac aat gca aaa cac gaa ata gta aat gtg Glu Ile Tyr Leu Ile Arg Tyr Asn Ala Lys His Glu Ile Val Asn Val 770 775 780 785	2588
cca ggc acg ggt tcc tta tgg ccg ctt tca gcc caa agt cca atc gga Pro Gly Thr Gly Ser Leu Trp Pro Leu Ser Ala Gln Ser Pro Ile Gly 790 795 800	2636
aag tgt gga gaa ccg aat cga tgc gcg cca cac ctt gaa tgg aat cct Lys Cys Gly Glu Pro Asn Arg Cys Ala Pro His Leu Glu Trp Asn Pro 805 810 815	2684
gat cta gat tgt tcc tgc aga gac ggg gaa aaa tgt gca cat cat tcc Asp Leu Asp Cys Ser Cys Arg Asp Gly Glu Lys Cys Ala His His Ser 820 825 830	2732

cat cat ttc acc ttg gat att gat gtt gga tgt aca gac tta aat gag His His Phe Thr Leu Asp Ile Asp Val Gly Cys Thr Asp Leu Asn Glu	835	840	845	2780		
gac tta ggt gta tgg gtg ata ttc aag att aag acg caa gat ggc cat Asp Leu Gly Val Trp Val Ile Phe Lys Ile Lys Thr Gln Asp Gly His	850	855	860	865	2828	
gca aga cta ggg aat cta gag ttt ctc gaa gag aaa cca tta tta ggg Ala Arg Leu Gly Asn Leu Glu Phe Leu Glu Glu Lys Pro Leu Leu Gly	870	875	880		2876	
gaa gca cta gct cgt gtg aaa aga gcg gag aag aag tgg aga gac aaa Glu Ala Leu Ala Arg Val Lys Arg Ala Glu Lys Lys Trp Arg Asp Lys	885	890	895		2924	
cga gag aaa ctg cag ttg gaa aca aat att gtt tat aaa gag gca aaa Arg Glu Lys Leu Gln Leu Glu Thr Asn Ile Val Tyr Lys Glu Ala Lys	900	905	910		2972	
gaa tct gta gat gct tta ttt gta aac tct caa tat gat aga tta caa Glu Ser Val Asp Ala Leu Phe Val Asn Ser Gln Tyr Asp Arg Leu Gln	915	920	925		3020	
gtg gat acg aac atc gcg atg att cat gcg gca gat aaa cgc gtt cat Val Asp Thr Asn Ile Ala Met Ile His Ala Ala Asp Lys Arg Val His	930	935	940	945		3068
aga atc cgg gaa gcg tat ctg cca gag ttg tct gtg att cca ggt gtc Arg Ile Arg Glu Ala Tyr Leu Pro Glu Leu Ser Val Ile Pro Gly Val	950	955	960			3116
aat gcg gcc att ttc gaa gaa tta gag gga cgt att ttt aca gcg tat Asn Ala Ala Ile Phe Glu Glu Leu Glu Gly Arg Ile Phe Thr Ala Tyr	965	970	975			3164
tcc tta tat gat gcg aga aat gtc att aaa aat ggc gat ttc aat aat Ser Leu Tyr Asp Ala Arg Asn Val Ile Lys Asn Gly Asp Phe Asn Asn	980	985	990			3212
ggc tta tta tgc tgg aac gtg aaa ggt cat gta gat gta gaa gag caa Gly Leu Leu Cys Trp Asn Val Lys Gly His Val Asp Val Glu Glu Gln	995	1000	1005			3260
aac aac cac cgt tcg gtc ctt gtt atc cca gaa tgg gag gca gaa gtc Asn Asn His Arg Ser Val Leu Val Ile Pro Glu Trp Glu Ala Glu Val	1010	1015	1020	1025		3308
tca caa gag gtt cgt gtc tgt cca ggt cgt ggc tat atc ctt cgt gtc Ser Gln Glu Val Arg Val Cys Pro Gly Arg Gly Tyr Ile Leu Arg Val	1030	1035	1040			3356

aca gca tat aaa gag gga tat gga gag ggc tgc gta acg atc cat gag			3404
Thr Ala Tyr Lys Glu Gly Tyr Gly Glu Gly Cys Val Thr Ile His Glu			
1045	1050	1055	
atc gaa gac aat aca gac gaa ctg aaa ttc agc aac tgt gta gaa gag			3452
Ile Glu Asp Asn Thr Asp Glu Leu Lys Phe Ser Asn Cys Val Glu Glu			
1060	1065	1070	
gaa gta tat cca aac aac aca gta acg tgt aat aat tat act ggg act			3500
Glu Val Tyr Pro Asn Asn Thr Val Thr Cys Asn Asn Tyr Thr Gly Thr			
1075	1080	1085	
caa gaa gaa tat gag ggt acg tac act tct cgt aat caa gga tat gac			3548
Gln Glu Glu Tyr Glu Gly Thr Tyr Ser Arg Asn Gln Gly Tyr Asp			
1090	1095	1100	1105
gaa gcc tat ggt aat aac cct tcc gta cca gct gat tac gct tca gtc			3596
Glu Ala Tyr Gly Asn Asn Pro Ser Val Pro Ala Asp Tyr Ala Ser Val			
1110	1115	1120	
tat gaa gaa aaa tcg tat aca gat gga cga aga gag aat cct tgt gaa			3644
Tyr Glu Glu Lys Ser Tyr Thr Asp Gly Arg Arg Glu Asn Pro Cys Glu			
1125	1130	1135	
tct aac aga ggc tat ggg gat tac aca cca cta ccg gct ggt tat gta			3692
Ser Asn Arg Gly Tyr Gly Asp Tyr Thr Pro Leu Pro Ala Gly Tyr Val			
1140	1145	1150	
aca aag gat tta gag tac ttc cca gag acc gat aag gta tgg att gag			3740
Thr Lys Asp Leu Glu Tyr Phe Pro Glu Thr Asp Lys Val Trp Ile Glu			
1155	1160	1165	
atc gga gaa aca gaa aca ttc atc gtg gat agc gtg gaa tta ctc			3788
Ile Gly Glu Thr Glu Gly Thr Phe Ile Val Asp Ser Val Glu Leu Leu			
1170	1175	1180	1185
ctt atg gag gaa taa gatacgttat aaaatgtaac gtatgcaaat aaagaatgat			3843
Leu Met Glu Glu			
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Ser Ser Ile Asp Ile Ser Leu Ser Leu Val Gln Phe Met Val Ser Asn
35 40 45

Phe Val Pro Gly Gly Phe Leu Val Gly Leu Ile Asp Phe Val Trp
50 55 60

Gly Ile Val Gly Pro Ser Gln Trp Asp Ala Phe Leu Val Gln Ile Glu
65 70 75 80

Gln Leu Ile Asn Glu Arg Ile Ala Glu Phe Ala Arg Asn Ala Ala Ile
85 90 95

Ala Asn Leu Glu Gly Leu Glu Asn Asn Leu Asn Ile Tyr Val Glu Ala
100 105 110

Phe Lys Glu Trp Glu Glu Asp Pro Asn Asn Pro Glu Thr Arg Thr Arg
115 120 125

Val Ile Asp Arg Phe Arg Ile Leu Asp Gly Leu Leu Glu Arg Asp Ile
130 135 140

Pro Ser Phe Arg Ile Ser Gly Phe Glu Val Pro Leu Leu Ser Val Tyr
145 150 155 160

Ala Gln Ala Ala Asn Leu His Leu Ala Ile Leu Arg Asp Ser Val Ile
165 170 175

Phe Gly Glu Arg Trp Gly Leu Thr Thr Ile Asn Val Asn Glu Asn Tyr
180 185 190

Asn Arg Leu Ile Arg His Ile Asp Glu Tyr Ala Asp His Cys Ala Asn
195 200 205

Thr Tyr Asn Arg Gly Leu Asn Asn Leu Pro Lys Ser Thr Tyr Gln Asp
210 215 220

Trp Ile Thr Tyr Asn Arg Leu Arg Arg Asp Leu Thr Leu Thr Val Leu
225 230 235 240

Asp Ile Ala Ala Phe Phe Pro Asn Tyr Asp Asn Arg Arg Tyr Pro Ile
245 250 255

Gln Pro Val Gly Gln Leu Thr Arg Glu Val Tyr Thr Asp Pro Leu Ile
260 265 270

Asn Phe Asn Pro Gln Leu Gln Ser Val Ala Gln Leu Pro Thr Phe Asn
275 280 285

Val Met Glu Ser Ser Ala Ile Arg Asn Pro His Leu Phe Asp Ile Leu
290 295 300

Asn Asn Leu Thr Ile Phe Thr Asp Trp Phe Ser Val Gly Arg Asn Phe
305 310 320

Tyr Trp Gly Gly His Arg Val Ile Ser Ser Leu Ile Gly Gly Gly Asn
325 330 335

Ile Thr Ser Pro Ile Tyr Gly Arg Glu Ala Asn Gln Glu Pro Pro Arg
340 345 350

Ser Phe Thr Phe Asn Gly Pro Val Phe Arg Thr Leu Ser Asn Pro Thr
355 360 365

Leu Arg Leu Leu Gln Gln Pro Trp Pro Ala Pro Pro Phe Asn Leu Arg
370 375 380

Gly Val Glu Gly Val Glu Phe Ser Thr Pro Thr Asn Ser Phe Thr Tyr
385 390 395 400

Arg Gly Arg Gly Thr Val Asp Ser Leu Thr Glu Leu Pro Pro Glu Asp
405 410 415

Asn Ser Val Pro Pro Arg Glu Gly Tyr Ser His Arg Leu Cys His Ala
420 425 430

Thr Phe Val Gln Arg Ser Gly Thr Pro Phe Leu Thr Thr Gly Val Val
435 440 445

Phe Ser Trp Thr His Arg Ser Ala Thr Leu Thr Asn Thr Ile Asp Pro
450 455 460

Glu Arg Ile Asn Gln Ile Pro Leu Val Lys Gly Phe Arg Val Trp Gly
465 470 475 480

Gly Thr Ser Val Ile Thr Gly Pro Gly Phe Thr Gly Gly Asp Ile Leu
485 490 495

Arg Arg Asn Thr Phe Gly Asp Phe Val Ser Leu Gln Val Asn Ile Asn
500 505 510

Ser Pro Ile Thr Gln Arg Tyr Arg Leu Arg Phe Arg Tyr Ala Ser Ser
515 520 525

Arg Asp Ala Arg Val Ile Val Leu Thr Gly Ala Ala Ser Thr Gly Val
530 535 540

Gly Gly Gln Val Ser Val Asn Met Pro Leu Gln Lys Thr Met Glu Ile
545 550 555 560

Gly Glu Asn Leu Thr Ser Arg Thr Phe Arg Tyr Thr Asp Phe Ser Asn
565 570 575

Pro Phe Ser Phe Arg Ala Asn Pro Asp Ile Ile Gly Ile Ser Glu Gln
580 585 590

Pro Leu Phe Gly Ala Gly Ser Ile Ser Ser Gly Glu Leu Tyr Ile Asp
595 600 605

Lys Ile Glu Ile Ile Leu Ala Asp Ala Thr Phe Glu Ala Glu Ser Asp
610 615 620

Leu Glu Arg Ala Gln Lys Ala Val Asn Ala Leu Phe Thr Ser Ser Asn
625 630 635 640

Gln Ile Gly Leu Lys Thr Asp Val Thr Asp Tyr His Ile Asp Gln Val
645 650 655

Ser Asn Leu Val Asp Cys Leu Ser Asp Glu Phe Cys Leu Asp Glu Lys
660 665 670

Arg Glu Leu Ser Glu Lys Val Lys His Ala Lys Arg Leu Ser Asp Glu
675 680 685

Arg Asn Leu Leu Gln Asp Pro Asn Phe Arg Gly Ile Asn Arg Gln Pro
690 695 700

Asp Arg Gly Trp Arg Gly Ser Thr Asp Ile Thr Ile Gln Gly Gly Asp
705 710 715 720

Asp Val Phe Lys Glu Asn Tyr Val Thr Leu Pro Gly Thr Val Asp Glu
725 730 735

Cys Tyr Pro Thr Tyr Leu Tyr Gln Lys Ile Asp Glu Ser Lys Leu Lys
740 745 750

Ala Tyr Thr Arg Tyr Glu Leu Arg Gly Tyr Ile Glu Asp Ser Gln Asp
755 760 765

Leu Glu Ile Tyr Leu Ile Arg Tyr Asn Ala Lys His Glu Ile Val Asn
770 775 780

Val Pro Gly Thr Gly Ser Leu Trp Pro Leu Ser Ala Gln Ser Pro Ile
785 790 795 800

Gly Lys Cys Gly Glu Pro Asn Arg Cys Ala Pro His Leu Glu Trp Asn
805 810 815

Pro Asp Leu Asp Cys Ser Cys Arg Asp Gly Glu Lys Cys Ala His His
820 825 830

Ser His His Phe Thr Leu Asp Ile Asp Val Gly Cys Thr Asp Leu Asn
835 840 845

Glu Asp Leu Gly Val Trp Val Ile Phe Lys Ile Lys Thr Gln Asp Gly
850 855 860

His Ala Arg Leu Gly Asn Leu Glu Phe Leu Glu Glu Lys Pro Leu Leu
865 870 875 880

Gly Glu Ala Leu Ala Arg Val Lys Arg Ala Glu Lys Lys Trp Arg Asp
885 890 895

Lys Arg Glu Lys Leu Gln Leu Glu Thr Asn Ile Val Tyr Lys Glu Ala
900 905 910

Lys Glu Ser Val Asp Ala Leu Phe Val Asn Ser Gln Tyr Asp Arg Leu
915 920 925

Gln Val Asp Thr Asn Ile Ala Met Ile His Ala Ala Asp Lys Arg Val
930 935 940

His Arg Ile Arg Glu Ala Tyr Leu Pro Glu Leu Ser Val Ile Pro Gly
945 950 955 960

Val Asn Ala Ala Ile Phe Glu Glu Leu Glu Gly Arg Ile Phe Thr Ala
965 970 975

Tyr Ser Leu Tyr Asp Ala Arg Asn Val Ile Lys Asn Gly Asp Phe Asn
980 985 990

Asn Gly Leu Leu Cys Trp Asn Val Lys Gly His Val Asp Val Glu Glu
995 1000 1005

Gln Asn Asn His Arg Ser Val Leu Val Ile Pro Glu Trp Glu Ala Glu
1010 1015 1020

Val Ser Gln Glu Val Arg Val Cys Pro Gly Arg Gly Tyr Ile Leu Arg
1025 1030 1035 1040

Val Thr Ala Tyr Lys Glu Gly Tyr Gly Glu Gly Cys Val Thr Ile His
1045 1050 1055

Glu Ile Glu Asp Asn Thr Asp Glu Leu Lys Phe Ser Asn Cys Val Glu
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Glu Glu Val Tyr Pro Asn Asn Thr Val Thr Cys Asn Asn Tyr Thr Gly
1075 1080 1085

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Asp Glu Ala Tyr Gly Asn Asn Pro Ser Val Pro Ala Asp Tyr Ala Ser
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Val Tyr Glu Glu Lys Ser Tyr Thr Asp Gly Arg Arg Glu Asn Pro Cys
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Glu Ser Asn Arg Gly Tyr Gly Asp Tyr Thr Pro Leu Pro Ala Gly Tyr
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Val Thr Lys Asp Leu Glu Tyr Phe Pro Glu Thr Asp Lys Val Trp Ile
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aat cat tcc gca caa atg gat cta tta cca gat gct cgt att gag gat 96
Asn His Ser Ala Gln Met Asp Leu Leu Pro Asp Ala Arg Ile Glu Asp
20 25 30

agc ttg tgt ata gcc gag ggg aac aat att gat cca ttt gtt agc gca 144
Ser Leu Cys Ile Ala Glu Gly Asn Asn Ile Asp Pro Phe Val Ser Ala
35 40 45

tca aca gtc caa acg ggt att aac ata gct ggt aga ata cta ggc gta 192
Ser Thr Val Gln Thr Gly Ile Asn Ile Ala Gly Arg Ile Leu Gly Val
50 55 60

ttg ggc gta ccg ttt gct gga caa cta gct agt ttt tat agt ttt ctt 240
Leu Gly Val Pro Phe Ala Gly Gln Leu Ala Ser Phe Tyr Ser Phe Leu
65 70 75 80

gtt ggt gaa tta tgg ccc cgc ggc aga gat cag tgg gaa att ttc cta 288

Val Gly Glu Leu Trp Pro Arg Gly Arg Asp Gln Trp Glu Ile Phe Leu			
85	90	95	
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Glu His Val Glu Gln Leu Ile Asn Gln Gln Ile Thr Glu Asn Ala Arg			
100	105	110	
aat acg gct ctt gct cga tta caa ggt tta gga gat tcc ttc aga gcc			384
Asn Thr Ala Leu Ala Arg Leu Gln Gly Leu Gly Asp Ser Phe Arg Ala			
115	120	125	
tat caa cag tca ctt gaa gat tgg cta gaa aac cgt gat gat gca aga			432
Tyr Gln Gln Ser Leu Glu Asp Trp Leu Glu Asn Arg Asp Asp Ala Arg			
130	135	140	
acg aga agt gtt ctt cat acc caa tat ata gct tta gaa ctt gat ttt			480
Thr Arg Ser Val Leu His Thr Gln Tyr Ile Ala Leu Glu Leu Asp Phe			
145	150	155	160
ctt aat gcg atg ccg ctt ttc gca att aga aac caa gaa gtt cca tta			528
Leu Asn Ala Met Pro Leu Phe Ala Ile Arg Asn Gln Glu Val Pro Leu			
165	170	175	
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180	185	190	
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Asp Ala Ser Leu Phe Gly Ser Glu Phe Gly Leu Thr Ser Gln Glu Ile			
195	200	205	
caa cgc tat tat gag cgc caa gtg gaa cga acg aga gat tat tcc gac			672
Gln Arg Tyr Tyr Glu Arg Gln Val Glu Arg Thr Arg Asp Tyr Ser Asp			
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Tyr Cys Val Glu Trp Tyr Asn Thr Gly Leu Asn Ser Leu Arg Gly Thr			
225	230	235	240
aat gcc gca agt tgg gta cgg tat aat caa ttc cgt aga gat cta acg			768
Asn Ala Ala Ser Trp Val Arg Tyr Asn Gln Phe Arg Arg Asp Leu Thr			
245	250	255	
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Leu Gly Val Leu Asp Leu Val Ala Leu Phe Pro Ser Tyr Asp Thr Arg			
260	265	270	
act tat cca ata aat acg agt gct cag tta aca aga gaa gtt tat aca			864
Thr Tyr Pro Ile Asn Thr Ser Ala Gln Leu Thr Arg Glu Val Tyr Thr			
275	280	285	
gac gca att gga gca aca ggg gta aat atg gca agt atg aat tgg tat			912
Asp Ala Ile Gly Ala Thr Gly Val Asn Met Ala Ser Met Asn Trp Tyr			

290	295	300	
aat aat aat gca cct tcg ttc tct gcc ata gag gct gcg gct atc cga Asn Asn Asn Ala Pro Ser Phe Ser Ala Ile Glu Ala Ala Ala Ile Arg 305	310	315	960
agc ccg cat cta ctt gat ttt cta gaa caa ctt aca att ttt agc gct Ser Pro His Leu Leu Asp Phe Leu Glu Gln Leu Thr Ile Phe Ser Ala 325	330	335	1008
tca tca cga tgg agt aat act agg cat atg act tat tgg cg ^g ggg cac Ser Ser Arg Trp Ser Asn Thr Arg His Met Thr Tyr Trp Arg Gly His 340	345	350	1056
acg att caa tct cg ^g cca ata gga ggc gga tta aat acc tca acg cat Thr Ile Gln Ser Arg Pro Ile Gly Gly Leu Asn Thr Ser Thr His 355	360	365	1104
ggg gct acc aat act tct att aat cct gta aca tta cg ^g ttc gca tct Gly Ala Thr Asn Thr Ser Ile Asn Pro Val Thr Leu Arg Phe Ala Ser 370	375	380	1152
cga gac gtt tat agg act gaa tca tat gca gga gt ^g ctt cta tgg gga Arg Asp Val Tyr Arg Thr Glu Ser Tyr Ala Gly Val Leu Leu Trp Gly 385	390	395	1200
att tac ctt gaa cct att cat ggt gtc cct act gtt agg ttt aat ttt Ile Tyr Leu Glu Pro Ile His Gly Val Pro Thr Val Arg Phe Asn Phe 405	410	415	1248
acg aac cct cag aat att tct gat aga ggt acc gct aac tat agt caa Thr Asn Pro Gln Asn Ile Ser Asp Arg Gly Thr Ala Asn Tyr Ser Gln 420	425	430	1296
cct tat gag tca cct ggg ctt caa tta aaa gat tca gaa act gaa tta Pro Tyr Glu Ser Pro Gly Leu Gln Leu Lys Asp Ser Glu Thr Glu Leu 435	440	445	1344
cca cca gaa aca aca gaa cga cca aat tat gaa tct tac agt cac agg Pro Pro Glu Thr Thr Glu Arg Pro Asn Tyr Glu Ser Tyr Ser His Arg 450	455	460	1392
tta tct cat ata ggt ata att tta caa tcc agg gt ^g aat gta ccg gta Leu Ser His Ile Gly Ile Leu Gln Ser Arg Val Asn Val Pro Val 465	470	475	1440
tat tct tgg acg cat cgt agt gca gat cgt acg aat acg att gga cca Tyr Ser Trp Thr His Arg Ser Ala Asp Arg Thr Asn Thr Ile Gly Pro 485	490	495	1488
aat aga atc acc caa atc cca atg gta aaa gca tcc gaa ctt cct caa Asn Arg Ile Thr Gln Ile Pro Met Val Lys Ala Ser Glu Leu Pro Gln 500	505	510	1536

ggt acc act gtt aga gga cca gga ttt act ggt ggg gat att ctt Gly Thr Thr Val Val Arg Gly Pro Gly Phe Thr Gly Gly Asp Ile Leu 515 520 525	1584
cga aga acg aat act ggt gga ttt gga ccg ata aga gta act gtt aac Arg Arg Thr Asn Thr Gly Gly Phe Gly Pro Ile Arg Val Thr Val Asn 530 535 540	1632
gga cca tta aca caa aga tat cgt ata gga ttc cgc tat gct tca act Gly Pro Leu Thr Gln Arg Tyr Arg Ile Gly Phe Arg Tyr Ala Ser Thr 545 550 555 560	1680
gta gat ttt gat ttc ttt gta tca cgt gga ggt act act gta aat aat Val Asp Phe Asp Phe Phe Val Ser Arg Gly Gly Thr Thr Val Asn Asn 565 570 575	1728
ttt aga ttc cta cgt aca atg aac agt gga gac gaa cta aaa tac gga Phe Arg Phe Leu Arg Thr Met Asn Ser Gly Asp Glu Leu Lys Tyr Gly 580 585 590	1776
aat ttt gtg aga cgt gct ttt act aca cct ttt act ttt aca caa att Asn Phe Val Arg Arg Ala Phe Thr Thr Pro Phe Thr Phe Thr Gln Ile 595 600 605	1824
caa gat ata att cga acg tct att caa ggc ctt agt gga aat ggg gaa Gln Asp Ile Ile Arg Thr Ser Ile Gln Gly Leu Ser Gly Asn Gly Glu 610 615 620	1872
gtg tat ata gat aaa att gaa att att cca gtt act gca acc ttc gaa Val Tyr Ile Asp Lys Ile Glu Ile Ile Pro Val Thr Ala Thr Phe Glu 625 630 635 640	1920
gca gaa tat gat tta gaa aga gcg caa gag gcg gtg aat gct ctg ttt Ala Glu Tyr Asp Leu Glu Arg Ala Gln Glu Ala Val Asn Ala Leu Phe 645 650 655	1968
act aat acg aat cca aga aga ttg aaa aca gat gtg aca gat tat cat Thr Asn Thr Asn Pro Arg Arg Leu Lys Thr Asp Val Thr Asp Tyr His 660 665 670	2016
att gat caa gta tcc aat tta gtg gcg tgt tta tcg gat gaa ttc tgc Ile Asp Gln Val Ser Asn Leu Val Ala Cys Leu Ser Asp Glu Phe Cys 675 680 685	2064
ttg gat gaa aag aga gaa tta ctt gag aaa gtg aaa tat gcg aaa cga Leu Asp Glu Lys Arg Glu Leu Leu Glu Lys Val Lys Tyr Ala Lys Arg 690 695 700	2112
ctc agt gat gaa aga aac tta ctc caa gat cca aac ttc aca tcc atc Leu Ser Asp Glu Arg Asn Leu Leu Gln Asp Pro Asn Phe Thr Ser Ile 705 710 715 720	2160
aat aag caa cca gac ttc ata tct act aat gag caa tcg aat ttc aca	2208

Asn Lys Gln Pro Asp Phe Ile Ser Thr Asn Glu Gln Ser Asn Phe Thr			
725	730	735	
tct atc cat gaa caa tct gaa cat gga tgg tgg gga agt gag aac att			2256
Ser Ile His Glu Gln Ser Glu His Gly Trp Trp Gly Ser Glu Asn Ile			
740	745	750	
acc atc cag gaa gga aat gac gta ttt aaa gag aat tac gtc aca cta			2304
Thr Ile Gln Glu Gly Asn Asp Val Phe Lys Glu Asn Tyr Val Thr Leu			
755	760	765	
ccg ggt act ttt aat gag tgt tat ccg acg tat tta tat caa aaa ata			2352
Pro Gly Thr Phe Asn Glu Cys Tyr Pro Thr Tyr Leu Tyr Gln Lys Ile			
770	775	780	
ggg gag tcg gaa tta aaa gct tat act cgc tac caa tta aga ggt tat			2400
Gly Glu Ser Glu Leu Lys Ala Tyr Thr Arg Tyr Gln Leu Arg Gly Tyr			
785	790	795	800
att gaa gat agt caa gat tta gag ata tat ttg att cgt tat aat gcg			2448
Ile Glu Asp Ser Gln Asp Leu Glu Ile Tyr Leu Ile Arg Tyr Asn Ala			
805	810	815	
aaa cat gaa aca ttg gat gtt cca ggt acc gag tcc cta tgg ccg ctt			2496
Lys His Glu Thr Leu Asp Val Pro Gly Thr Glu Ser Leu Trp Pro Leu			
820	825	830	
tca gtt gaa agc cca atc gga agg tgc gga gaa ccg aat cga tgc gca			2544
Ser Val Glu Ser Pro Ile Gly Arg Cys Gly Glu Pro Asn Arg Cys Ala			
835	840	845	
cca cat ttt gaa tgg aat cct gat cta gat tgt tcc tgc aga gat gga			2592
Pro His Phe Glu Trp Asn Pro Asp Leu Asp Cys Ser Cys Arg Asp Gly			
850	855	860	
gaa aaa tgt gcg cat cat tcc cat cat ttc tct ttg gat att gat gtt			2640
Glu Lys Cys Ala His His Ser His Phe Ser Leu Asp Ile Asp Val			
865	870	875	880
gga tgc aca gac ttg cat gag aat cta ggc gtg tgg gtg gta ttc aag			2688
Gly Cys Thr Asp Leu His Glu Asn Leu Gly Val Trp Val Val Phe Lys			
885	890	895	
att aag acg cag gaa ggt cat gca aga cta ggg aat ctg gaa ttt att			2736
Ile Lys Thr Gln Glu Gly His Ala Arg Leu Gly Asn Leu Glu Phe Ile			
900	905	910	
gaa gag aaa cca tta tta gga gaa gca ctg tct cgt gtg aag agg gca			2784
Glu Glu Lys Pro Leu Leu Gly Glu Ala Leu Ser Arg Val Lys Arg Ala			
915	920	925	
gag aaa aaa tgg aga gac aaa cgt gaa aaa cta caa ttg gaa aca aaa			2832
Glu Lys Lys Trp Arg Asp Lys Arg Glu Lys Leu Gln Leu Glu Thr Lys			

930	935	940	
cga gta tat aca gag gca aaa gaa gct gtg gat gct tta ttc gta gat Arg Val Tyr Thr Glu Ala Lys Glu Ala Val Asp Ala Leu Phe Val Asp	950	955	2880
945			
tct caa tat gat aga tta caa gcg gat aca aac atc ggc atg att cat Ser Gln Tyr Asp Arg Leu Gln Ala Asp Thr Asn Ile Gly Met Ile His	965	970	2928
950			
gcg gca gat aaa ctt gtt cat cga att cga gag gcg tat ctt tca gaa Ala Ala Asp Lys Leu Val His Arg Ile Arg Glu Ala Tyr Leu Ser Glu	980	985	2976
955			
tta cct gtt atc cca ggt gta aat gcg gaa att ttt gaa gaa tta gaa Leu Pro Val Ile Pro Gly Val Asn Ala Glu Ile Phe Glu Glu Leu Glu	995	1000	3024
960			
ggt cac att atc act gca atc tcc tta tac gat gcg aga aat gtc Gly His Ile Ile Thr Ala Ile Ser Leu Tyr Asp Ala Arg Asn Val	1010	1015	3069
965			
gtt aaa aat ggt gat ttt aat aat gga tta aca tgt tgg aat gta Val Lys Asn Gly Asp Phe Asn Asn Gly Leu Thr Cys Trp Asn Val	1025	1030	3114
970			
aaa ggg cat gta gat gta caa cag agc cat cat cgt tct gac ctt Lys Gly His Val Asp Val Gln Gln Ser His His Arg Ser Asp Leu	1040	1045	3159
975			
gtt atc cca gaa tgg gaa gca gaa gtg tca caa gca gtt cgc gtc Val Ile Pro Glu Trp Glu Ala Glu Val Ser Gln Ala Val Arg Val	1055	1060	3204
980			
tgt ccg ggg tgt ggc tat atc ctt cgt gtc aca gcg tac aaa gag Cys Pro Gly Cys Gly Tyr Ile Leu Arg Val Thr Ala Tyr Lys Glu	1070	1075	3249
985			
gga tat gga gag ggc tgc gta acg atc cat gaa atc gag aac aat Gly Tyr Gly Glu Gly Cys Val Thr Ile His Glu Ile Glu Asn Asn	1085	1090	3294
990			
aca gac gaa cta aaa ttt aaa aac cgt gaa gaa gag gaa gtg tat Thr Asp Glu Leu Lys Phe Lys Asn Arg Glu Glu Glu Val Tyr	1100	1105	3339
995			
cca acg gat aca gga acg tgt aat gat tat act gca cac caa ggt Pro Thr Asp Thr Gly Thr Cys Asn Asp Tyr Thr Ala His Gln Gly	1115	1120	3384
1000			
aca gct gga tgc gca gat gca tgt aat tcc cgt aat gct gga tat Thr Ala Gly Cys Ala Asp Ala Cys Asn Ser Arg Asn Ala Gly Tyr	1130	1135	3429
1005			
1010			
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Glu His Val Glu Gln Leu Ile Asn Gln Gln Ile Thr Glu Asn Ala Arg
100 105 110

Asn Thr Ala Leu Ala Arg Leu Gln Gly Leu Gly Asp Ser Phe Arg Ala
115 120 125

Tyr Gln Gln Ser Leu Glu Asp Trp Leu Glu Asn Arg Asp Asp Ala Arg
130 135 140

Thr Arg Ser Val Leu His Thr Gln Tyr Ile Ala Leu Glu Leu Asp Phe
145 150 155 160

Leu Asn Ala Met Pro Leu Phe Ala Ile Arg Asn Gln Glu Val Pro Leu
165 170 175

Leu Met Val Tyr Ala Gln Ala Ala Asn Leu His Leu Leu Leu Leu Arg
180 185 190

Asp Ala Ser Leu Phe Gly Ser Glu Phe Gly Leu Thr Ser Gln Glu Ile
195 200 205

Gln Arg Tyr Tyr Glu Arg Gln Val Glu Arg Thr Arg Asp Tyr Ser Asp
210 215 220

Tyr Cys Val Glu Trp Tyr Asn Thr Gly Leu Asn Ser Leu Arg Gly Thr
225 230 235 240

Asn Ala Ala Ser Trp Val Arg Tyr Asn Gln Phe Arg Arg Asp Leu Thr
245 250 255

Leu Gly Val Leu Asp Leu Val Ala Leu Phe Pro Ser Tyr Asp Thr Arg
260 265 270

Thr Tyr Pro Ile Asn Thr Ser Ala Gln Leu Thr Arg Glu Val Tyr Thr
275 280 285

Asp Ala Ile Gly Ala Thr Gly Val Asn Met Ala Ser Met Asn Trp Tyr
290 295 300

Asn Asn Asn Ala Pro Ser Phe Ser Ala Ile Glu Ala Ala Ala Ile Arg
305 310 315 320

Ser Pro His Leu Leu Asp Phe Leu Glu Gln Leu Thr Ile Phe Ser Ala
325 330 335

Ser Ser Arg Trp Ser Asn Thr Arg His Met Thr Tyr Trp Arg Gly His
340 345 350

Thr Ile Gln Ser Arg Pro Ile Gly Gly Leu Asn Thr Ser Thr His
355 360 365

Gly Ala Thr Asn Thr Ser Ile Asn Pro Val Thr Leu Arg Phe Ala Ser
370 375 380

Arg Asp Val Tyr Arg Thr Glu Ser Tyr Ala Gly Val Leu Leu Trp Gly
385 390 395 400

Ile Tyr Leu Glu Pro Ile His Gly Val Pro Thr Val Arg Phe Asn Phe
405 410 415

Thr Asn Pro Gln Asn Ile Ser Asp Arg Gly Thr Ala Asn Tyr Ser Gln
420 425 430

Pro Tyr Glu Ser Pro Gly Leu Gln Leu Lys Asp Ser Glu Thr Glu Leu
435 440 445

Pro Pro Glu Thr Thr Glu Arg Pro Asn Tyr Glu Ser Tyr Ser His Arg
450 455 460

Leu Ser His Ile Gly Ile Ile Leu Gln Ser Arg Val Asn Val Pro Val
465 470 475 480

Tyr Ser Trp Thr His Arg Ser Ala Asp Arg Thr Asn Thr Ile Gly Pro
485 490 495

Asn Arg Ile Thr Gln Ile Pro Met Val Lys Ala Ser Glu Leu Pro Gln
500 505 510

Gly Thr Thr Val Val Arg Gly Pro Gly Phe Thr Gly Gly Asp Ile Leu
515 520 525

Arg Arg Thr Asn Thr Gly Gly Phe Gly Pro Ile Arg Val Thr Val Asn
530 535 540

Gly Pro Leu Thr Gln Arg Tyr Arg Ile Gly Phe Arg Tyr Ala Ser Thr
545 550 555 560

Val Asp Phe Asp Phe Phe Val Ser Arg Gly Gly Thr Thr Val Asn Asn
565 570 575

Phe Arg Phe Leu Arg Thr Met Asn Ser Gly Asp Glu Leu Lys Tyr Gly
580 585 590

Asn Phe Val Arg Arg Ala Phe Thr Thr Pro Phe Thr Phe Thr Gln Ile
595 600 605

Gln Asp Ile Ile Arg Thr Ser Ile Gln Gly Leu Ser Gly Asn Gly Glu
610 615 620

Val Tyr Ile Asp Lys Ile Glu Ile Ile Pro Val Thr Ala Thr Phe Glu
625 630 635 640

Ala Glu Tyr Asp Leu Glu Arg Ala Gln Glu Ala Val Asn Ala Leu Phe
645 650 655

Thr Asn Thr Asn Pro Arg Arg Leu Lys Thr Asp Val Thr Asp Tyr His
660 665 670

Ile Asp Gln Val Ser Asn Leu Val Ala Cys Leu Ser Asp Glu Phe Cys
675 680 685

Leu Asp Glu Lys Arg Glu Leu Leu Glu Lys Val Lys Tyr Ala Lys Arg
690 695 700

Leu Ser Asp Glu Arg Asn Leu Leu Gln Asp Pro Asn Phe Thr Ser Ile
705 710 715 720

Asn Lys Gln Pro Asp Phe Ile Ser Thr Asn Glu Gln Ser Asn Phe Thr

725

730

735

Ser Ile His Glu Gln Ser Glu His Gly Trp Trp Gly Ser Glu Asn Ile
740 745 750

Thr Ile Gln Glu Gly Asn Asp Val Phe Lys Glu Asn Tyr Val Thr Leu
755 760 765

Pro Gly Thr Phe Asn Glu Cys Tyr Pro Thr Tyr Leu Tyr Gln Lys Ile
770 775 780

Gly Glu Ser Glu Leu Lys Ala Tyr Thr Arg Tyr Gln Leu Arg Gly Tyr
785 790 795 800

Ile Glu Asp Ser Gln Asp Leu Glu Ile Tyr Leu Ile Arg Tyr Asn Ala
805 810 815

Lys His Glu Thr Leu Asp Val Pro Gly Thr Glu Ser Leu Trp Pro Leu
820 825 830

Ser Val Glu Ser Pro Ile Gly Arg Cys Gly Glu Pro Asn Arg Cys Ala
835 840 845

Pro His Phe Glu Trp Asn Pro Asp Leu Asp Cys Ser Cys Arg Asp Gly
850 855 860

Glu Lys Cys Ala His His Ser His His Phe Ser Leu Asp Ile Asp Val
865 870 875 880

Gly Cys Thr Asp Leu His Glu Asn Leu Gly Val Trp Val Val Phe Lys
885 890 895

Ile Lys Thr Gln Glu Gly His Ala Arg Leu Gly Asn Leu Glu Phe Ile
900 905 910

Glu Glu Lys Pro Leu Leu Gly Glu Ala Leu Ser Arg Val Lys Arg Ala
915 920 925

Glu Lys Lys Trp Arg Asp Lys Arg Glu Lys Leu Gln Leu Glu Thr Lys
930 935 940

Arg Val Tyr Thr Glu Ala Lys Glu Ala Val Asp Ala Leu Phe Val Asp
945 950 955 960

Ser Gln Tyr Asp Arg Leu Gln Ala Asp Thr Asn Ile Gly Met Ile His
965 970 975

Ala Ala Asp Lys Leu Val His Arg Ile Arg Glu Ala Tyr Leu Ser Glu
980 985 990

Leu Pro Val Ile Pro Gly Val Asn Ala Glu Ile Phe Glu Glu Leu Glu
995 1000 1005

Gly His Ile Ile Thr Ala Ile Ser Leu Tyr Asp Ala Arg Asn Val
1010 1015 1020

Val Lys Asn Gly Asp Phe Asn Asn Gly Leu Thr Cys Trp Asn Val
1025 1030 1035

Lys Gly His Val Asp Val Gln Gln Ser His His Arg Ser Asp Leu
1040 1045 1050

Val Ile Pro Glu Trp Glu Ala Glu Val Ser Gln Ala Val Arg Val
1055 1060 1065

Cys Pro Gly Cys Gly Tyr Ile Leu Arg Val Thr Ala Tyr Lys Glu
1070 1075 1080

Gly Tyr Gly Glu Gly Cys Val Thr Ile His Glu Ile Glu Asn Asn
1085 1090 1095

Thr Asp Glu Leu Lys Phe Lys Asn Arg Glu Glu Glu Val Tyr
1100 1105 1110

Pro Thr Asp Thr Gly Thr Cys Asn Asp Tyr Thr Ala His Gln Gly
1115 1120 1125

Thr Ala Gly Cys Ala Asp Ala Cys Asn Ser Arg Asn Ala Gly Tyr
1130 1135 1140

Glu Asp Ala Tyr Glu Val Asp Thr Thr Ala Ser Val Asn Tyr Lys
1145 1150 1155

Pro Thr Tyr Glu Glu Glu Thr Tyr Thr Asp Val Arg Arg Asp Asn
1160 1165 1170

His Cys Glu Tyr Asp Arg Gly Tyr Val Asn Tyr Pro Pro Val Pro
1175 1180 1185

Ala Gly Tyr Val Thr Lys Glu Leu Glu Tyr Phe Pro Glu Thr Asp
1190 1195 1200

Thr Val Trp Ile Glu Ile Gly Glu Thr Glu Gly Lys Phe Ile Val
1205 1210 1215

Asp Ser Val Glu Leu Leu Leu Met Glu Glu
1220 1225